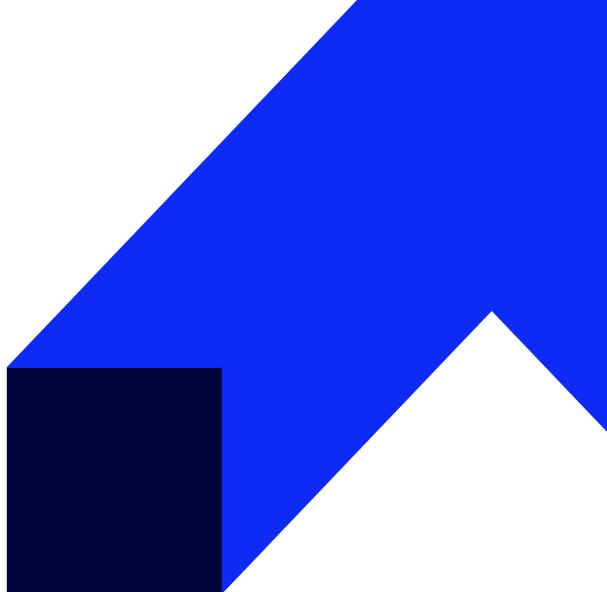# E-Learning - Designing Cisco Data Center Infrastructure v 7.1

Cisco - On Demand E-Learning

The **Designing Cisco Data Center Infrastructure (DCID)** provides training on designing data centers using Cisco data centers solutions and technologies. Topics covered include network designs with virtualization technologies, Layer 2 and Layer 3 technologies and routing protocols, and data center interconnect design options. You'll learn design practices for the Cisco Unified Computing System™ (Cisco UCS®) solution based on Cisco UCS B-Series and C-Series servers, Cisco UCS Manager, and Cisco Unified Fabric, while gaining experience with network management technologies including Cisco UCS Manager, Cisco Data Center Network Manager (DCNM), and Cisco UCS Director.

This training helps you prepare to take the exam:

- 300-610 Designing Cisco Data Center Infrastructure (DCID)

Access Duration: 180 days

Continuing Education Credits: 40

Training recipients

- IT professionals with five to eight years of experience in these roles:
- Data center engineers
- Network designers
- Network administrators

- Network engineers
- Systems engineers
- Consulting systems engineers
- Technical solutions architects
- Server administrators
- Network managers
- Cisco integrators or partners

Benefits

This training will help you:

- Make design choices for optimal data center infrastructure performance, virtualization, security, and automation
- Master the practical and theoretical knowledge necessary to design a scalable, reliable, and intelligent data center based on Cisco technologies
- Qualify for professional-level job roles in the high-demand area of enterprise-class data center environments

Training program

- **Course Objectives**
- Describe the Layer 2 and Layer 3 forwarding options and protocols used in a data center
- Describe the rack design options, traffic patterns, and data center switching layer access, aggregation, and core
- Describe Locator/ID separation protocol
- Design a solution that uses Virtual Extensible LAN (VXLAN) for traffic forwarding
- Describe the hardware redundancy options; how to virtualize the network, compute, and storage functions; and virtual networking in the data center
- Describe solutions that use fabric extenders and compare Cisco Adapter Fabric Extender (FEX) with single root input/output virtualization (SR-IOV)
- Describe security threats and solutions in the data center
- Describe advanced data center security technologies and best practices
- Describe device management and orchestration in the data center
- Describe the storage options for the compute function and the different Redundant Array of Independent Disks (RAID) levels from a high-availability and performance perspective
- Describe Fibre Channel concepts and architecture
- Describe Fibre Channel topologies and industry terms

- Describe Fibre Channel over Ethernet (FCoE)
- Describe security options in the storage network
- Describe the management and automation options for the storage networking infrastructure
- Describe Cisco UCS servers and use cases for various Cisco UCS platforms
- Explain the connectivity options for fabric interconnects for southbound and northbound connections
- Describe the hyperconverged solution and integrated systems
- Describe the systemwide parameters for setting up a Cisco UCS domain
- Describe role-based access control (RBAC) and integration with directory servers to control access rights on Cisco UCS Manager
- Describe the pools that may be used in service profiles or service profile templates on Cisco UCS Manager
- Describe the different policies in the service profile
- Describe the Ethernet and Fibre Channel interface policies and additional network technologies
- Describe the advantages of templates and the difference between initial and updated templates
- Describe data center automation tools

Course Outline

Learning Path Curriculum

- Cisco Data Center Network Design
- Cisco Data Center Compute Design
- Cisco Data Center Storage
- Cisco Data Center Automation Design
- Cisco Data Center Security Design

Lab Outline

Module 1: High Availability on Layer 2

Module 2: Designing Layer 3 Connectivity

Module 3: Designing Data Center Topologies

Module 4: Locator/ID Separation Protocol

Module 5: VXLAN Overlay Networks

Module 6: Hardware and Device Virtualization

Module 7: Cisco FEX Options

Module 8: Basic Data Center Security

Module 9: Advanced Data Center Security

Module 10: Management and Orchestration

Module 11: Storage and RAID Options

Module 12: Fibre Channel Topologies

Module 13: Fibre Channel Topologies

Module 14: FCoE

Module 15: Storage Security

Module 16: SAN Management and Orchestration

Module 17: Cisco UCS Servers and Use Cases

Module 18: Fabric Interconnect Connectivity

Module 19: Hyperconverged and Integrated Systems

Module 20: Cisco UCS Manager Systemwide Parameters

Module 21: Cisco UCS RBAC

Module 22: Pools for Service Profiles

Module 23: Policies for Service Profiles

Module 24: Network-Specific Adapters and Policies

Module 25: Templates in Cisco UCS Manager

Module 26: Designing Data Center Automation

Expected preparation of the participant

Before taking this offering, you should be able to:

- Implement data center networking [Local Area Network (LAN) and Storage Area Network (SAN)]
- Describe data center storage
- Implement data center virtualization
- Implement Cisco Unified Computing System (Cisco UCS)
- Implement data center automation and orchestration with the focus on Cisco Application Centric Infrastructure (ACI) and Cisco UCS Director
- Describe products in the Cisco Data Center Nexus and MDS families

Training Includes

- Self-Paced Training
- Video Training

Language

- Language: English
- Materials: English

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Examination description

Certification

Associated Certification: CCNP Data Center

Associated Exam: 300-610 DCID